

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An exhaust gas control apparatus for an internal combustion engine, comprising:

an exhaust catalyst disposed in an exhaust passage of the internal combustion engine;

a concentration detection unit that is capable of detecting a total concentration of a sulfur oxide and a hydrogen sulfide contained in an exhaust gas that passes through the exhaust catalyst, and detecting a concentration of the sulfur oxide;

a catalytic temperature detection unit that detects a temperature of the exhaust catalyst; and

a sulfur concentration estimation unit that estimates a sulfur concentration of a fuel based on a detection value of the concentration detection unit when it is determined that the exhaust gas is at one of a stoichiometric and rich air/fuel ~~ratio~~ ratio, and that permits the application of the estimated sulfur concentration when the temperature detected by the catalytic temperature detection unit is lower than a predetermined temperature.

2. (Previously Presented) The exhaust gas control apparatus according to claim 1, further comprising an air/fuel ratio control unit that controls the air/fuel ratio of the exhaust gas into one of the stoichiometric state and the rich state.

3. (Previously Presented) The exhaust gas control apparatus according to claim 2, wherein the air/fuel ratio control unit executes a rich spike control in which the air/fuel ratio of the exhaust gas is temporarily brought into the rich state at a predetermined cycle, and the air/fuel ratio control unit comprises a rich amount increase unit that executes at least one of a control for holding the air/fuel ratio of the exhaust gas in the rich state for a longer time

than a time under the rich spike control, and a control for bringing the air/fuel ratio of the exhaust gas into a richer state than a state under the rich spike control.

4. (Previously Presented) The exhaust gas control apparatus according to claim 2, wherein the exhaust catalyst comprises a NOx catalyst of occlusion and reduction type, a NOx occluded amount estimation unit is provided for estimating an amount of NOx that has been occluded in the NOx catalyst, and the air/fuel ratio control unit controls the air/fuel ratio of the exhaust gas into one of the stoichiometric state and the rich state when the NOx occluded amount estimated by the NOx occluded amount estimation unit is determined to be equal to or larger than a predetermined amount.

5. (Canceled)

6. (Currently Amended) An exhaust gas control method for an internal combustion engine, in which an exhaust catalyst is disposed in an exhaust passage of the internal combustion engine, the method comprising:

detecting, and with a concentration detection ~~unit that is capable of detecting~~
unit, a total concentration of a sulfur oxide and a hydrogen sulfide contained in an exhaust gas that passes through the exhaust ~~catalyst, and~~ catalyst;

detecting, with the concentration detection unit, ~~detecting~~ a concentration of the sulfur oxide, ~~the exhaust gas control method being characterized in that~~ oxide; and

detecting a temperature of the exhaust catalyst,

wherein a sulfur concentration of a fuel is estimated based on a detection value of the concentration detection unit when it is determined that the exhaust gas is at one of a stoichiometric and rich air/fuel ~~ratio-~~ ratio, and the estimated sulfur concentration is applied
when the detected temperature is lower than a predetermined temperature.

7. (Previously Presented) The exhaust gas control method according to claim 6, wherein the air/fuel ratio of the exhaust gas is controlled into one of the stoichiometric state and the rich state.

8. (Previously Presented) The exhaust gas control method according to claim 7, wherein a rich spike control in which the air/fuel ratio of the exhaust gas is temporarily brought into the rich state is executed at a predetermined cycle, and at least one of a control for holding the air/fuel ratio of the exhaust gas in the rich state for a longer time than a time under the rich spike control, and a control for bringing the air/fuel ratio of the exhaust gas into a richer state than a state under the rich spike control is executed.

9. (Previously Presented) The exhaust gas control method according to claim 7, wherein an amount of NO_x that has been occluded in a NO_x catalyst provided as the exhaust catalyst is estimated, and the air/fuel ratio of the exhaust gas is controlled into one of the stoichiometric state and the rich state when the estimated occluded amount of the NO_x is determined to be equal to or larger than a predetermined amount.

10. (Canceled)